

## ABSTRACT OF THE DISCLOSURE

“Efficient XML Schema Validation of XML Fragments Using Annotated Automaton  
Encoding”

5        An XML schema is compiled into an annotated automaton encoding, which  
includes a parsing table for structural information and annotation for type information.  
The representation is extended to include a mapping from schema types to states in a  
parsing table. To validate a fragment against a schema type, it is necessary simply to  
determine the state corresponding to the schema type, and start the validation process  
10    from that state. When the process returns to the state, fragment validation has reached  
successful completion. This approach is more efficient than a general tree  
representation. Only the data representation of the schema information is handled,  
making it much easier than manipulating validation parser code generated by a parser  
generator. In addition, only one representation is needed for schema information for  
15    both document and fragment validation. This approach also provides a basis for  
incremental validation after update.